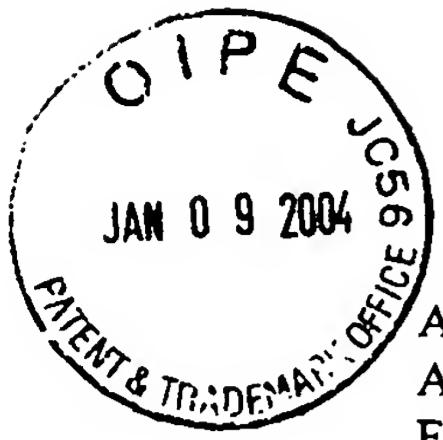


BEST AVAILABLE COPY



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No. : 10/658,049 Confirmation No. 1948
Applicant(s) : Clinton J. Boriack, et al.
Filed : September 9, 2003
TC/A.U. : 1712
Examiner : Unknown
Title : PROCESS FOR MANUFACTURING AN α -DIHYDROXY
DERIVATIVE AND EPOXY RESINS PREPARED THEREFROM
Docket No. : 60991B
Customer No. : 00109

I HEREBY CERTIFY THAT THIS CORRESPONDENCE IS BEING
DEPOSITED WITH THE UNITED STATES POSTAL SERVICE AS
FIRST CLASS MAIL WITH SUFFICIENT POSTAGE IN AN ENVELOPE
ADDRESSED TO: ASSISTANT COMMISSIONER FOR PATENTS,
WASHINGTON, DC 20231, ON:

January 6, 2004

DATE OF DEPOSIT

Beth L. Ramon
PRINT OR TYPE NAME OF PERSON SIGNING CERTIFICATE

Beth L. Ramon
SIGNATURE OF PERSON SIGNING CERTIFICATE

1/6/04
DATE OF SIGNATURE

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

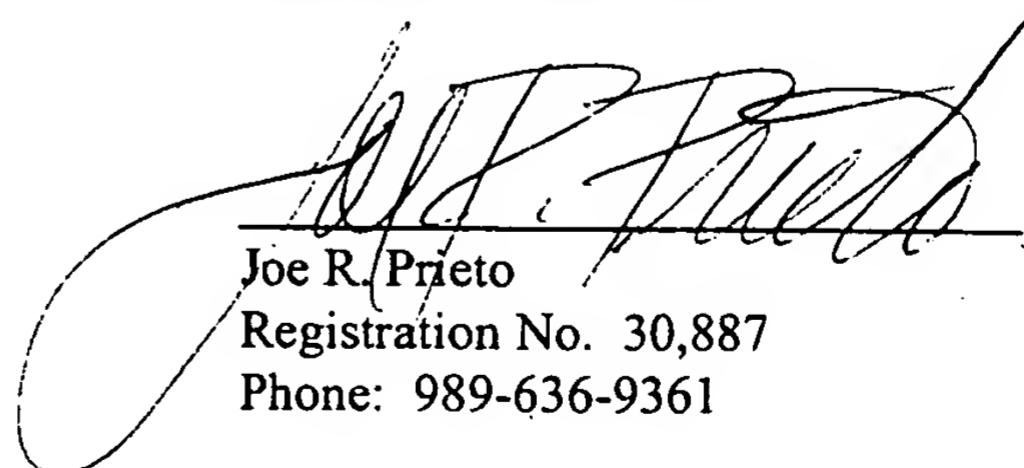
Sir:

INFORMATION DISCLOSURE STATEMENT

Pursuant to Applicant's duty of disclosure under 37 CFR §1.56, the Examiner's attention is directed to the information identified in the attached Form PTO 1449.

A copy of all cited foreign patents and printed publications is enclosed. The Examiner is requested to review each reference and formulate his/her own understanding thereof.

Respectfully submitted,


Joe R. Prieto
Registration No. 30,887
Phone: 989-636-9361

P. O. Box 1967
Midland, MI 48641-1967
JRP/kal

JAN 09 2004

O I P E
P A T E N T & T R ADE M A R K
O F F I C E 9 5INFORMATION DISCLOSURE
STATEMENT

(Use Several Sheets if necessary)

ATTY DOCKET NO.
60991BSERIAL NO.
10/658,049APPLICANT
Boriack, et al.FILING DATE
September 9, 2003GROUP
1712

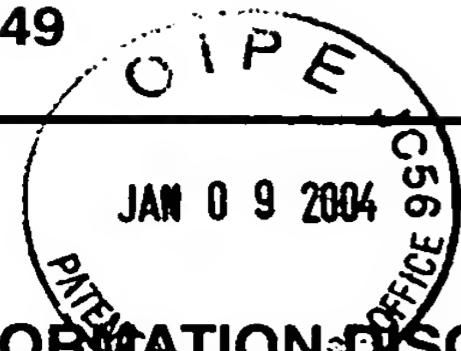
U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE IF APPROPRIATE
	US 2,144,612	01/24/1939	Britton, et al.	260	633	
	US 2,714,602	08/02/1955	Abbott	260	410	
	US 4,314,088	02/02/1982	Austin, et al.	568	860	
	US 4,413,151	11/01/1983	Michaelson, et al.	568	860	
	US 4,496,779	01/29/1985	Myers, et al.	568	860	
	US 4,499,255	02/12/1985	Wang, et al.	528	95	
	US 4,507,492	03/26/1985	Woo	560	64	
	US 4,721,798	01/26/1988	Mulder	549	533	
	US 4,740,330	04/26/1988	Wang, et al.	260	395	
	US 4,778,863	10/18/1988	Wang, et al.	525	507	
	US 4,785,061	11/15/1988	Wang, et al.	525	507	
	US 4,871,855	10/03/1989	Marko, et al.	546	134	
	US 4,965,364	10/23/1990	Marko, et al.	546	134	
	US 5,028,686	07/02/1991	Liao, et al.	528	92	
	US 5,126,494	06/30/1992	Gilheany, et al.	568	807	
	US 5,227,543	07/13/1993	Sharpless, et al.	568	860	
	US 5,260,461	11/09/1993	Hartung, et al.	549	447	
	US 5,516,929	05/14/1996	Sharpless, et al.	560	38	
	US 5,578,740	11/26/1996	Au, et al.	549	525	
	US 6,001,945	12/14/1999	Decker, et al.	528	26	
	US 6,005,063	12/21/1999	Van Doorn, et al.	528	86	

EXAMINER

DATE CONSIDERED

*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include a copy of this form with next communication to Applicant.


**INFORMATION DISCLOSURE
STATEMENT**

(Use Several Sheets if necessary)

ATTY DOCKET NO.
60991BSERIAL NO.
10/658,049APPLICANT
Boriack, et al.FILING DATE
September 9, 2003GROUP
1712

U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE IF APPROPRIATE
	US 6,087,513	07/11/2000	Liao, et al.	549	524	
	US 6,100,412	08/08/2000	Thiele, et al.	549	523	
	US 6,534,621 B2	03/18/2003	Boriack, et al.	528	87	

FOREIGN PATENT DOCUMENTS

	DOCUMENT NUMBER	PUBLICATION DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION YES NO
	WO 92/20677	11/26/92	PCT			
	WO 98/35927	08/20/98	PCT			
	WO 99/09020	02/25/99	PCT			
	WO 0064844 A1	11/02/00	PCT			
	WO 0064848 A1	11/02/00	PCT			
	EP 0970951	01/12/00	EP			
	EP 0077201 A2	10/08/82	EP			

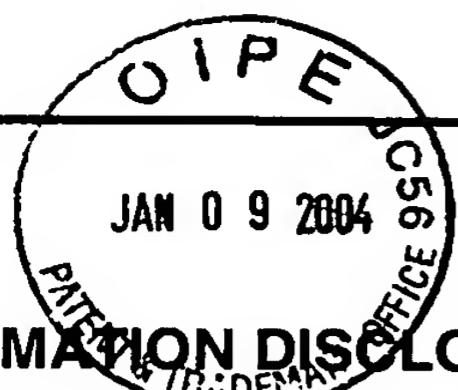
OTHER DISCLOSURES (Including Author, Title, Date, Pertinent Pages, Place of Publication, Etc.)

	Lee et al., "Handbook of Epoxy Resins", Mc-Graw Hill Book Co., New York, NY, pp. 2-3 to 2-4 (1982)
	Leeman et al., "Glycidol Properties, Reaction, Applications", New York, NY, pp. 48-52 (1981)
	Wasserman, et al, "Retention of Configuration in the Opening of cis-and trans-Dypone Oxides", Journal of the American Chemical Society, 78, pp. 1726 (1956)
	Murray, et al., "Olefin Epoxidations Using the Dicyclohexylcarbodiimide-H ₂ O ₂ System", JOURNAL OF ORGANIC CHEMISTRY, 63, pp. 1730-1731,(1998)
	Brink, et al, "Selenium Catalysed Oxidations with Aqueous Hydrogen Peroxide", JOURNAL OF CHEMICAL SOCIETY PERKIN, pp. 224-228 (2001)

EXAMINER

DATE CONSIDERED

*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include a copy of this form with next communication to Applicant.


**INFORMATION DISCLOSURE
STATEMENT**

(Use Several Sheets if necessary)

ATTY DOCKET NO.

60991B

SERIAL NO.

10/658,049

APPLICANT

Boriack, et al.

FILING DATE

September 9, 2003

GROUP

1712

OTHER DISCLOSURES (Including Author, Title, Date, Pertinent Pages, Place of Publication, Etc.)

Murray, "Dioxiranes", CHEMICAL REVIEWS, 89, pp. 1187-1201 (1989)

Boehlow, et al., "Optical Resolution of Amine N-Oxide by Diastereoisomeric Complex Formation with Optically Active Host Compound", TETRAHEDRON LETTERS, 30, pp. 1839-1842 (1989)

Neimann, et al., "A New Non-Metal Heterogeneous Catalyst for the Activation of Hydrogen Peroxide", CHEMICAL COMMUNICATIONS, 5, pp. 487-488 (2001)

"PROCESS FOR MANUFACTURING A HALOHYDRIN INTERMEDIATE AND EPOXY RESINS PREPARED THEREFROM" filed in the United States of America on May 18, 2000; Application Serial No.: 60/205,366; Applicant: Boriack, et al.

Shing, et al., ANGEWANDTE CHEMICAL, 106, pp. 2408-2409 (1994)

Beller, et al., "Diols via Catalytic Dihydroxylation", APPL. HOMOGENEOUS CATAL. ORGANOMET. COMPD., 2, pp. 1009-1010 (1996)

Marko, et al., "Dihydroxylation of Carbon-Carbon Double Bonds", COMPREHENSIVE ASYMMETRIC CATALYSIS, I-III, pp. 713-787 (1999)

Shing, et al., "Ruthenium-Catalyzed *cis*-Dihydroxylation of Alkenes Scope and Limitations", CHEMICAL EUROPEAN JOURNAL, 2, pp. 50-57 (1996)

Johnson, et al., "Catalytic Asymmetric Dihydroxylation-Discovery and Development", CATALYTIC ASYMMETRIC SYNTHESIS, Second Edition, pp. 357-398 (2000)

ORGANIC SYNTHESES COLLECTION, VI, pp. 342-348 (1988)

Pini, et al., "Heterogeneous Transition Metal Catalysts", CHIM. IND. (MILAN), 81, pp. 189-199 (1999)

Bolm, et al. "Asymmetric Dihydroxylations using Immobilized Alkaloids with an Anthraquinone Core", SYNLETT, 1, pp. 93-95 (2001)

Van Vliet, et al., "Fluorinated Alcohols: Effective Solvents for Uncatalysed Epoxidations with Aqueous Hydrogen Peroxide", SYNLETT, 2, pp. 248-250 (2001)

Wirth, "Oxygen and Osmium-A New Alliance for Dihydroxylations?", ANGEWANDTE CHEMIE INTERNATIONAL EDITION, 2, pp. 334-335 (2000)

Bhaumik, et al., "Selective Dihydroxylation over Titanium Silicate Molecular Sieves", JOURNAL OF CATALYSIS, 176, pp. 305-309 (1998)

EXAMINER

DATE CONSIDERED

*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include a copy of this form with next communication to Applicant.

JAN 09 2004

C55C

INFORMATION DISCLOSURE
STATEMENT

(Use Several Sheets if necessary)

ATTY DOCKET NO.

60991B

SERIAL NO.

10/658,049

APPLICANT

Boriack, et al.

FILING DATE

September 9, 2003

GROUP

1712

OTHER DISCLOSURES (Including Author, Title, Date, Pertinent Pages, Place of Publication, Etc.)

Mehltretter, et al., "An Improved Version of the Sharpless Asymmetric Dihydroxylation", TETRAHEDRON LETTERS, 41, pp. 8083-8087 (2000)

Sharpless, et al., "The Osmium-Catalyzed Asymmetric Dihydroxylation: A New Ligand Class and a Process Improvement", JOURNAL OF ORGANIC CHEMISTRY, 10, pp. 2768-2771 (1992)

Kolb, et al., "Catalytic Asymmetric Dihydroxylation", CHEMICAL REVIEWS, 94, pp. 2483 (1994)

Han, et al., "Soluble Polymer-Bound Ligand-Accelerated Catalysis: Asymmetric Dihydroxylation", JOURNAL OF AMERICAN CHEMICAL SOCIETY, 118, pp. 7632-7633 (1996)

Salvadori, et al., "Insoluble Polymer-Bound (IPB) Approach to the Catalytic Asymmetric Dihydroxylation of Alkenes", SYNLETT, 8, pp. 1181-1190 (1999)

Severeyns, et al., "A Heterogeneous cis-Dihydroxylation Catalyst with Stable, Site-Isolated Osmium-Diolate Reaction Centers", ANGEWANDTE CHEMIE INTERNATIONAL EDITION, 40, pp. 586-589 (2001)

Kobayashi, et al., "Catalytic Asymmetric Dihydroxylation of Olefins Using a Recoverable and Reusable Polymer-Supported Osmium Catalyst", JOURNAL OF AMERICAN CHEMICAL SOCIETY, 121, pp. 11229-11230 (1999)

De Vos, et al., "Highly Selective Epoxidation of Alkenes and Styrenes with H_2O_2 and Manganese Complexes of the Cyclic Triamine 1,4,7-trimethyl-1,4,7-triazacyclononane", CHEMICAL COMMUNICATIONS, pp. 917-918 (1996)

Koek, et al., "Synthesis and Properties of Hydrophobic $[Mn^{IV}_2(\mu-O)_3(L)_2]^{2+}$ Complexes, Derived from Alkyl Substituted 1,4,7-triazacyclononane Ligands", INORGANICA CHIMICA, 295, pp. 189-199 (1999)

Fatiadi, "The Classical Permanganate Ion: Still a Novel Oxidant in Organic Chemistry", SYNTHESIS, pp. 85, (1987)

Pietikainen, "Asymmetric Mn (III)-salen Catalyzed Epoxidation of Unfunctionalized Alkenes with in situ Generated Peroxycarboxylic Acids", JOURNAL OF MOLECULAR CATALYSIS, 165, pp. 73-79 (2001)

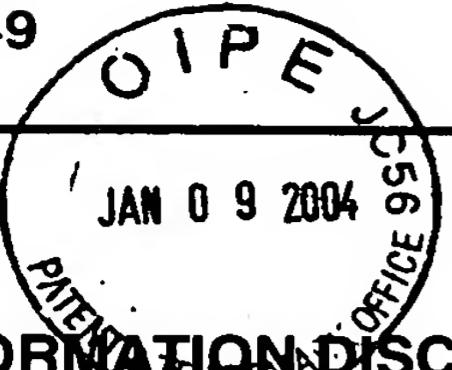
De Vos, et al., "Selective Alkene Oxidation with H_2O_2 and a Heterogenized Mn Catalyst: Epoxidation and a New Entry to Vicinal cis-Diols", ANGEWANDTE CHEMIE INTERNATIONAL EDITION, 38, pp. 980-983, (1999)

Knops-Gerrits, et al., "Oxidation Catalysis with Semi-Inorganic Zeolite-based Mn Catalysts", JOURNAL OF MOLECULAR CATALYSIS A: CHEMICAL, 117, pp. 57-70, (1997)

EXAMINER

DATE CONSIDERED

*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include a copy of this form with next communication to Applicant.


**INFORMATION DISCLOSURE
STATEMENT**

(Use Several Sheets if necessary)

ATTY DOCKET NO.
60991BSERIAL NO.
10/658,049APPLICANT
Boriack, et al.FILING DATE
September 9, 2003GROUP
1712

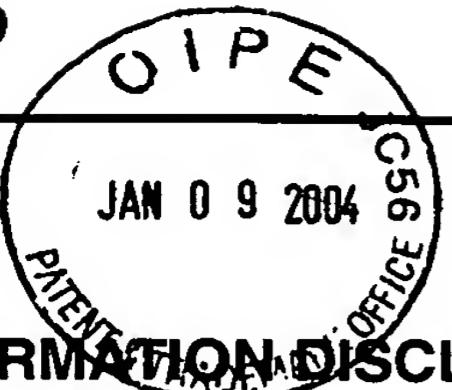
OTHER DISCLOSURES (Including Author, Title, Date, Pertinent Pages, Place of Publication, Etc.)

	Sutra, et al., "Preparation of MCM-41 Type Silica-Bound Manganese (III) Schiff-base Complexes", CHEMICAL COMMUNICATIONS, pp. 2485-2486 (1996)
	Herrmann, et al., "Organorhenium Oxides", ACCOUNTS OF CHEMICAL RESEARCH, 30, pp. 169-180 (1997)
	Owens, et al., "Rhenium Oxo Complexes in Catalytic Oxidations", CATALYSIS TODAY, 55, PP. 317-363 (2000)
	Romao, et al., "Rhenium (VII) Oxo and Imido Complexes: Synthesis, Structures, and Applications", CHEMICAL REVIEW, 97, pp. 3197-3246 (1997)
	Herrmann, et al., "Methyltrioxorhenium as Catalyst for Olefin Oxidation", ANGEWANDTE CHEMIE INTERNATIONAL EDITION ENGLISH, 30, pp. 1638-1643 (1991)
	Pietsch, et al., "LReO ₃ Epoxidizes, cis-Dihydroxylates, and Cleaves Alkenes as Well as Alkenylates Aldehydes: Toward an Understanding of Why", ORGANOMETALLICS, 17, pp. 2716-2719 (1998)
	Adam, et al., "Methyltrioxorhenium (VII)-Catalyzed Epoxidation of Alkenes with the Urea/Hydrogen Peroxide Adduct", ANGEWANDTE CHEMIE INTERNATIONAL EDITION ENGLISH, 35, pp. 533-535 (1996)
	Al-Ajlouni, et al., "Kinetics and Mechanism of the Epoxidation of Alkyl-Substituted Alkenes by Hydrogen Peroxide, Catalyzed by Methylrhenium Trioxide", JOURNAL OF ORGANIC CHEMISTRY, 61, pp. 3969-3976 (1996)
	Tan, et al., "Kinetics and Mechanism of the Dihydroxylation and Epoxidation of Conjugated Dienes with Hydrogen Peroxide Catalyzed by Methylrhenium Trioxide", INORGANIC CHEMISTRY, 37, pp. 467-472 (1998)
	Shing, et al., "Solvent Effect of Ruthenium Catalyzed Dihydroxylation", TETRAHEDRON LETTERS, 40, pp. 2179-2180 (1999)
	Ell, et al., "Vanadyl Acetylacetone as Peroxide Activator in Osmium-Catalyzed Dihydroxylation of Olefins by Hydrogen Peroxide", TETRAHEDRON LETTERS, 42, pp. 2569-2571 (2001)
	Li, et al., "Catalytic Asymmetric Dihydroxylation of Gold Colloids Functionalized with Self-Assembled Monolayers", LANGMUIR, 15, pp. 4957-4959 (1999)

EXAMINER

DATE CONSIDERED

*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include a copy of this form with next communication to Applicant.


**INFORMATION DISCLOSURE
STATEMENT**
(Use Several Sheets if necessary)

ATTY DOCKET NO.

60991B

SERIAL NO.

10/658,049

APPLICANT

Boriack, et al.

FILING DATE

September 9, 2003

GROUP

1712

OTHER DISCLOSURES (Including Author, Title, Date, Pertinent Pages, Place of Publication, Etc.)

Austin, et al., "Industrial Uses of Catalytic Oxidation and the Direct Oxidation of Olefins to Glycols", CATALYSIS OF ORGANIC REACTIONS, pp. 269-278 (1985)

Dobler, et al., "Atom-Efficient Oxidation of Alkenes with Molecular Oxygen: Synthesis of Diols", ANGEWANDTE CHEMIE INTERNATIONAL EDITION, 38, pp. 3026-3028 (1999)

Ell, et al., "Vanadyl Acetylacetone as Peroxide Activator in Osmium-Catalyzed Dihydroxylation of Olefins by Hydrogen Peroxide", TETRAHEDRON LETTERS, 42, pp. 2569-2571 (2001)

Wirth, "Oxygen and Osmium-A New Alliance for Dihydroxylations", ANGEWANDTE CHEMIE INTERNATIONAL EDITION, 39, pp. 334-335 (2000)

Dobler, et al., "Osmium-Catalyzed Dihydroxylation of Olefins Using Dioxygen or Air as the Terminal Oxidant", JOURNAL OF THE AMERICAN CHEMICAL SOCIETY, 122, pp. 10289-10297 (2000)

Chemical Abstract No. 1991: 206710, Rao, et al, "Sharpless Asymmetric Dihydroxylation of Aryloxy Allyl Ethers: A Simple Route to Chiral β -Blockers; Tetrahedron, 1990, pp. 697-698 (Abstract)

Chemical Abstracts No. 2001: 55239, Sakamoto, et al., "Preparation of Epoxides from Olefins and Catalysts for it"; JP Patent No. 2001-17863, 1-23-01 (Abstract)

U.S. Patent Application Serial No. 09/899,409; filed July 5, 2001, Boriack, et al.

EXAMINER

DATE CONSIDERED

*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include a copy of this form with next communication to Applicant.